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ABSTRACT

The attached materials have been developed for use on the CSU CYBER Computer's Statistical Package for the Social Sciences (SPSSONL). The assignments are graded in difficulty and gradually introduce new commands and require the practice of previously learned commands. The handouts begin with basic instructions for logging on; then XEDIT is taught and used for subsequent assignments to create data sets. A two-page handout on the basics of SPSSONL precedes the actual use of the SPSS manual. The assignments through number five are used in an upper division research methods course. The later materials are used in a graduate quantitative methods course (after a subset of the earlier materials). These materials supplement the lecture/demonstration/discussion components of the course and are not intended for use outside a very supportive environment except for students who have already mastered some computer-related skills. Since interpreting the output is at least as important as generating it, an APA-style write-up for each computer run is required. (Author/PN)

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GRADED SPSS EXERCISES

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The attached materials have been developed for use on the CSU CYBER Computer's SPSSONL. The assignments are graded in difficulty and gradually introduce new commands and require the practice of previously learned commands. The handouts begin with basic instructions for logging on; then XEDIT is taught and used for subsequent assignments to create data sets. A two-page handout on the basics of SPSSONL precedes the actual use of the SPSS manual. I use the assignments through #5 in an upper division research methods course. The latter materials I use in a graduate quantitative methods course (after a subset of the earlier materials). These materials supplement the lecture/demonstration/discussion components of the course and are not intended for use outside a very supportive environment except for students who have already mastered some computer-related skills. I feel that interpreting the output is at least as important as generating it, so I generally require an APA-style write-up for each computer run.

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COMPUTER USE

Local CYBER

1. To log on, follow instructions next to the terminal.
2. To log off, type BYE.
3. To change your password, type PASSWOR, old name, new name.
4. If you type the wrong character, use the Backspace to correct.
5. To find out all the files you have saved, type CAT LIST.
6. In order to finish a line of communication to the machine, hit the "Return" key.
7. In order to eliminate a bad file from your account type PURGE, file name.

COMPUTER USE
XEDIT

1.	To use on an old file name Tom: (You have to GET,TOM first.)	XEDIT, TOM
2.	To create a new file named Dick:	XEDIT, DICK
3.	To print the next five lines:	P5
4.	To move to the next line:	N
5.	a. To move down 3 lines: b. To move up 2 lines:	N3 N-2
6.	To delete 3 lines:	D3
7.	To insert two lines:	I2
8.	To move to the top of the file:	T
9.	To move to the bottom of the file:	B

10. To handle an unlimited number of lines, use * instead of a number, e.g., D* means delete the rest of the file. If you did I* to insert a number of lines type a CR on a blank line to get out of insert mode.

11. To modify a line: M

    (Then space under good parts and retype bad parts. Type # under characters you want to delete. Type & under characters you want to replace with a blank. Type ^ to insert a blank before a character.)

12.	To change a line:	C/bad part/good replacement/
13.	To locate the string of characters MOM:	L/MOM/
14.	To stop and save the program:	E,,RL
15.	To stop and save the program under the name Harry:	E,HARRY,RL

16. If you've made a major error, you can cancel all that you have done in this round by typing STOP.

SAMPLE NEW RUN

```
/XEDIT, DICK
?? I *
? THIS IS THE FIRST LINE.
? THIS IS THE NEXT LINE.
? THIS IS THE LAST LINE.
? (CR)
?? T
?? P *
```

The computer lists the 3 lines. If they're not perfect, use modify, delete, change, insert as needed.

```
?? E,, RL
/ (This means you're done with XEDIT and back on the system.)
```

SAMPLE RUN OF OLD FILE

```
/ GET, TOM
/ XEDIT, TOM
?? P *
```

Now computer prints TOM for you. Then use XEDIT to modify TOM. If you want to save the old TOM and save the modified TOM under the name SAM, then

```
?? E, SAM, RL
```

XEDIT Assignment

1. Log on the computer.
2. Write, using XEDIT, a program called TOM.
3. The contents of Tom are:
    1. This is the first line.
    2. This is the second line.
    3. This is getting boring.
4. Save TOM.
5. Call TOM back up into XEDIT and change the second line to say:
    2. This is the secondary line.
6. Exit from XEDIT, but label the modified TOM "DICK."
7. Do a CAT LIST to verify that TOM and DICK are OK.
8. Turn on the printer and use XEDIT to print TOM and DICK. Hand them in.

COMPUTER USE
SPSSONL

Date description cards:

```
RUN NAME
VARIABLE LIST
N OF CASES
INPUT FORMAT FIXED (  )
MISSING VALUES
```

Date transformation cards:

```
RECODE
COMPUTE
IF
```

Task selection cards:

```
T-TEST
PEARSON CORR
CROSSTABS
CONDESCRIPTIVE
FREQUENCIES
ANOVA
etc.
```

1. If you have used XEDIT to write your data file (called SLOW), and your program (called FAST), you would execute them like this:

```
/GET, SLOW
/GET, FAST
/SPSSONL
Use an SPSS system file this run
? No
Use a raw data file this run
? Yes
Enter file name
? SLOW
Auto-Mode
? READ, FAST
? E
```

Then the computer will do the work. (E stands for execute.)
Turn the printer on if you want a hard copy of the output.
To leave SPSS, type END.

2. If you have a data file called SLOW and want to write a command file in SPSS, you would do this:

```
/GET, SLOW
/SPSSONL
Use an SPSS system file this run
? No
Use a raw data file this run
? Yes
Enter file name
? SLOW
Auto-Mode
? Here you write your program.  Line numbers must be assigned, e.g.:

    10.   RUN NAME; TRIAL RUN
    20.   VARIABLE LIST; A,B, etc.
    ---------------------------------- OR

    10.   RUN NAME
    10.5  TRIAL RUN
    20.   VARIABLE LIST
    20.5  A, B
          etc.
    ---------------------------------- OR
```

type TEXT and put in lines like option one, without line numbers. To get out of TEXT mode, hit a CR before entering anything on that line.

At any point you can list the program by typing "L," you can delete line 30 by typing D 30, and you can insert a line between lines 20 and 30 by typing 25 and whatever you want to go on that line. You can examine lines 30 to 50 by typing L 30,50 and you can delete these lines by typing D 30,50. After the program is written, type E for execute.

After you are finished, you often want to save your program. Say you wanted to save it under the name ALEX. Then type

```
WRITE ALEX
END
```

and when you're off SPSS, immediately do

```
/SAVE, ALEX
```

or

```
/REPLACE, ALEX
```

if there is an old ALEX.

If you want to use ALEX later,

GET, ALEX and, after entering SPSSONL, READ, ALEX.

SPSS 1

COMPUTER ASSIGNMENT
Basic SPSS

Objectives:

1. Set up a data file.

2. Write a command file for a basic SPSS run. You will need to create the following cards.

```
RUN NAME
VARIABLE LIST
INPUT FORMAT
N OF CASES
CONDESCRIPTIVE
STATISTICS
```

Here are the data:

Subject	Sex	Age	Pre Test Score	Post Test Score	IQ	GPA
1	M	19	12.1	13.4	102	3.4
2	M	21	10	15.6	96	3.2
3	M	32	9.4	8.3	84	2.1
4	F	26	6	9.7	121	2.7
5	F	28	12	14	104	3.0
6	F	46	1.7	6.3	79	1.6

Here are your tasks:

1. Create a data file using XEDIT. Give it a name that you will remember, since you will be using it again.

2. Write an SPSS command file in SPSSONL. (When you are all finished, save this file because we will be using it again.)

   Your command file should read the data in and calculate means and standard deviations for age and the four scores.

3. Use the printer to print your computer printout.

4. Create a table in APA style that gives the means and standard deviations you calculated.

SPSS 2

COMPUTER ASSIGNMENT

Objectives:

1. To call up and use an already stored data file.
2. To call up and modify an already stored command file.
3. To use the data transformation statements
   RECODE
   COMPUTE
   IF
4. To use a SELECT IF statement and a *SELECT IF statement.
5. To use the command statement

   T-TEST

Here are your tasks:

1. GET the data file and command file you created in the last assignment (6 subjects with pre and post test scores, etc.).
2. Modify the command file in SPSSONL in the following ways:
   a. RECODE Age into two categories, where the young group is under age 27 and the old group is over age 26.
   b. COMPUTE a new variable that is an average of pretest and posttest scores (call this variable Score).
   c. Create a new variable using IF statements called Ability.
      Ability is low if IQ is under 100 and GPA is under 3.0.
      Ability is high if IQ is at least 100 and GPA is at least 3.0.
      Ability is medium if it is not high or low.
   d. Do a t-test comparing males to females on IQ, GPA, and SCORE.
   e. Do a t-test comparing Pretest to Posttest scores.
   f. Use a *SELECT IF or SELECT IF to get the means and standard deviations for age and GPA separately for each sex.
   g. Do a t-test comparing high ability to low ability subjects on pretest scores.
   h. Do a t-test comparing young to old subjects on GPA.
   i. Use the printer to get a copy of the computer otuput.
   j. Write a brief Results section as if this were a study you were conducting (APA style, as always).

SPSS 3

COMPUTER ASSIGNMENT

Objectives:

1. To create a new data file and command file.
2. To learn to use the MISSING VALUES card.
3. To learn to use the PEARSON CORR and ONEWAY commands.
4. To practice previously learned commands.

Here are your data:

Create a data file.

Subject	Age	Sex	Party	Degree of Religious Involvement	Educational Level	Income in Thousands
1	21	M	R	6	9	25
2	19	M	D	2	7	15
3	25	M	D	1	10	14
4	42	M	R	6	15	32
5	46	M	R	7	18	46
6	48	M	R	missing	16	31
7	34	M	D	1	8	12
8	23	F	D	2	10	11
9	27	F	D	5	missing	5
10	37	F	D	1	9	14
11	42	F	R	3	16	22
12	31	F	D	2	6	16
13	24	F	D	1	8	6
14	missing	F	R	7	16	12
15	46	F	R	6	16	17

Here are your tasks:

1. Create a command file. This file should:

   a. Read in the data.
   b. Tell the machine about missing data.
   c. Recode Age into three groups.
      Young = Ages 0 - 25
      Medium = Ages 26 - 40
      Old = Over 40
   d. Do a Oneway ANOVA to see if the three age groups differ in educational level and income.
   e. Correlate religious involvement, educational level, and income.
   f. Do a t-test comparing Republicans and Democrats on religious involvement, educational level, and income.
   g. Get means and standard deviations for ages for men and women separately.
   h. Use the printer to print your output and write up a brief Results section in APA style.

SPSS 4

COMPUTER ASSIGNMENT

Objectives:

1. To call up and use already created data and command files.
2. To learn to use CROSSTABS, BREAKDOWN and ANOVA.

Here are your tasks:

1. GET your old files (data file has 15 subjects, political party etc.)
2. Modify your SPSS program to
   a. Do a two-way ANOVA with independent variables Sex and Age (recoded as Young = under 37, Old = 37 or more) and dependent variable income. Use BREAKDOWN to get cell means.
   b. Do two CROSSTABS, looking at the relationship between Age (reocrded as above) and Party and between Party and Religious Involvement (recoded as high [5 or more] or low [under 5]).
   c. Use the printer to print your output and write up a brief Results section. Also, create a table showing cell means.

SPSS 5

COMPUTER ASSIGNMENT

Objective:

1. To do independent programming using SPSS.

Data:

Subject	Age	Sex	Pre-therapy Psychosis Rating	Post-therapy Psychosis Rating	Income in Thousands	Number of Friends
1	12	M	46	44	12	1
2	13	M	59	46	10	2
3	11	M	27	30	8	1
4	14	M	missing	15	9	0
5	22	M	98	70	16	2
6	27	M	117	59	35	3
7	41	M	112	40	5	2
8	23	M	86	50	8	1
9	9	F	104	60	8	7
10	14	F	117	14	10	12
11	12	F	99	53	13	3
12	13	F	85	60	9	2
13	23	F	62	13	10	4
14	21	F	58	42	27	3
15	47	F	48	9	7	5
16	36	F	68	75	4	3

Hypotheses to be tested:

1. Do female subjects have more friends than male subjects?
2. Did therapy reduce psychosis ratings?
3. Combine the psychosis ratings (average them). (Beware, you may need an Assign Missing statement.) Analyze the effect of Age (Young = under 21, Old = 21 or more) and sex on psychosis ratings. (This is an analysis of variance.)
4. Are income and post-therapy psychosis correlated?
5. Use the computer to find the median income and median number of friends. Dichotomize each variable by breaking at the median and do a test to see if they're related.
6. Create a new variable called Life where Life is high if both income and number of friends are above the median, life is low if both variables are below the median, and life is medium for other cases. See if people varying on Life have different post-therapy psychosis ratings.
7. Write up a Results section on your findings.

SPSS Advanced Correlation Assignment

Date

ID	Gender	Ht.	Wt.	IQ	Introv.	Neur.
1	F	5'4"	106	90	17	13
2	F	5'7"	142	140	46	3
3	M	6'1"	204	110	20	12
4	M	5'10"	161	108	22	10
5	M	6'2"	194	93	51	4
6	F	5'0"	96	87	16	21
7	F	5'4"	124	125	23	17
8	F	5'3"	118	115	19	20
9	M	5'8"	165	132	17	12
10	F	5'6"	160	107	15	22
11	M	5'2"	135	90	16	24
12	M	5'5"	140	101	23	9

SPSS Run

Use SPSS to

1. Get Pearson correlation between height and weight among women.
2. Get Pearson correlation of height with weight and with IQ.
3. Get Spearman and Kendall correlations between introversion and neurotocism.
4. Get a Scattergram between height and weight. (Use Statistics ALL.)
5. Get the partial correlation between height and IQ controlling for
   a. weight
   b. neurotocism
   c. both a and b
6. Use Regression to get the
   a. regression of height on weight
   b. rregression of IQ on introversion
   c. regression of IQ on neurotocism
   d. regression of IQ on both introversion and neurotocism
7. Get the multiple correlation of IQ with the combination of height and weight.
8. Get the canonical correlation of height and weight against IQ, introversion, and neurotocism.

SPSS Advanced Oneway Assignment

Objectives:

1. To use the command statement ONE WAY.
2. To do a priori t-tests.
3. To do post hoc comparisons.

Here are the data:

Subject	Mental Health Category	Quality of Parenting	Number of Siblings	Birth Order
1	Psychotic	1	0	first
2	Psychotic	2	2	middle
3	Psychotic	2	0	first
4	Neurotic	9	5	last
5	Neurotic	7	5	last
6	Neurotic	8	3	last
7	Normal	3	2	middle
8	Normal	2	5	middle
9	Normal	4	4	first

1. a. Do a one-way ANOVA comparing the three mental health groups on quality of parenting and number of siblings.

   b. Request the following post hoc tests: Duncan's multiple range test, the Student-Newman Keuls test, the Honestly Significant Difference test, and the Scheffé test.

   c. Pretend that you did this study with one planned comparison in mind: comparing the psychotics to the non-psychotics on quality of parenting and number of siblings. Request the appropriate a priori t-tests.

2. Repeat the above for birth order. For part c, compare first borns to latter borns.

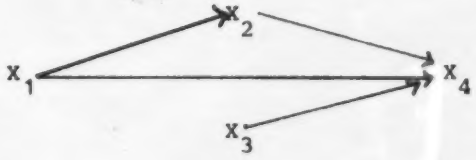
SPSS Path Analysis Assignment

Here are the data for a path analysis:

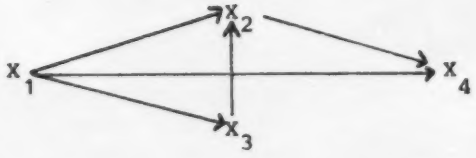
ID	X_1	X_2	X_3	X_4
1	4	9	6	10
2	5	8	9	9
3	6	4	12	5
4	8	6	4	8
5	10	10	16	12
6	14	12	8	11
7	18	18	12	19
8	21	22	40	20
9	24	20	21	20
10	30	14	32	16

Develop the path coefficients using REGRESSION and evaluate these alternative models:

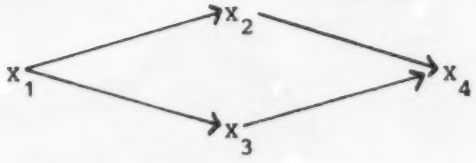
A.



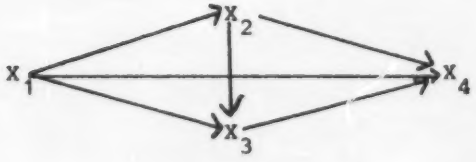
B.



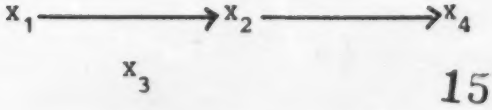
C.



D.



E.



SPSS Factor Analysis Assignment

You have 5 test scores for each subject. The tests are

Voc - Vocabulary
Ver - Verbal Reasoning
AR - Arithmetic Reasoning
AL - Algebraic Reasoning
Geo - Geometry

Your data are:

Subject	Voc	Ver	AR	AL	Geo
1	52	95	31	49	64
2	81	82	22	44	63
3	49	70	41	58	99
4	46	77	25	47	Missing
5	42	68	10	30	41
6	40	71	34	55	77
7	40	74	18	35	52
8	32	60	21	49	71
9	31	58	Missing	60	82
10	25	59	25	48	90
11	20	45	14	41	52
12	19	48	35	55	99
13	19	39	27	42	75
14	17	42	18	40	56
15	6	41	30	46	75

Do a Principal Factors factor analysis with iteration (PA2) and rotate using a Varimax rotation. Use an Options Card to do pairwise deletion of missing data and use a Statistics card to get the data correlation matrix printed in addition to the standard output. Write a brief summary and interpretation of the results of your factor analysis.

Be sure to:
1. Name your factors
2. Briefly discuss the communalities
3. Briefly discuss the eigenvalues and the number of factors